LESSONS LEARNED FROM THE GMLRS IPT PROCESS

Douglas Love

Introduction

The Guided Multiple Launch Rocket System (GMLRS) engineering phase was among the first engineering efforts to include an integrated product team (IPT) process. But despite the fact that this process led to many design decisions that provided a better product for the money, it fell far short of expectations and its potential. The resulting problems—communication, cooperation, and coordination (the three C's)—could easily be blamed on bad management decisions. However, we would then be overlooking basic issues that were the impetus for management's philosophy, which ultimately resulted in the shortcomings of this IPT process.

There were two basic issues that made this IPT process less effective than it could have been. First, the contractual arrangement did not fully incorporate the IPT process, and second, funding was insufficient to fully implement the process. This article addresses these issues and how they contributed to the problem areas mentioned earlier.

The Three C's

Before we discuss the contracting and funding issues, let's briefly look at the three primary problem areas. The first thing that should be noted is that all three of these areas concern the "integrated" and the "team" part of IPT. Each area is distinct, yet highly correlated. It is also important to note that the IPT process requires that contractor and government personnel act together as an integrated team.

Communication in an open and intimate manner is required for an integrated team, but this is very difficult when members of the team are separated by hundreds of miles. Because travel costs make it economically infeasible to meet face-to-face on a regular basis, there is a need for long-distance communication. Phone conversations are part of this, but are not sufficient for the level of required communication. As such, communications can be greatly enhanced with the use of video teleconferencing (VTC). However, there were not enough VTC facilities available to the GMLRS IPT, and the facilities that were available were inadequately equipped for communicating technical data.

Cooperation is directly related to communication, but is virtually worthless if IPT members do not openly discuss issues and facts in a cooperative manner. One such problem of the GMLRS IPT was that the contractor did not want to get into a money-losing situation. Therefore, senior contractor managers would not empower their people to make decisions or to openly discuss facts at lower IPT levels. This lack of cooperation was a direct result of the contractor management philosophy, which is discussed later.

Coordination is the final requirement for a team, and one of the benefits of the IPT process is that team members with various levels of expertise work together to not only get the best overall design, but also to make the best use of personnel. The contractor seemed unwilling to accept government data, analyses, or recommendations, which resulted in many shortfalls because the government was keenly aware of which design characteristics would provide the most effective system at the best price.

Contractual Arrangement

It would be easy for the government to put all the blame for the shortfall of the GMLRS IPT process on the prime contractor and, in fact, a cursory look (especially from the government's point of view) would certainly indicate that the contractor was the main contributor to the deficiencies with the three C's previously mentioned. However, the contractor's management philosophy that caused these problems was driven by the contract. Although the contract mentioned the IPT process and directed the contractor to follow this process, it also contained much status-quo language that opposed this process.

The IPT process calls for cooperation between the government and the contractor in developing the GMLRS design, which means that the government is demanding a certain level of authority in the design process. However, the contract still assigns total responsibility for the design and its cost to the contractor. If the government wants some design authority (which is necessary for an

Although the IPT process has resulted in some significant gains for both the government and industry, several changes must be made to make the process more effective.

IPT process), then the government must accept some of the responsibility for the final design and its costs.

One of the key incentives in the contract is performance awards for the contractor based on technical and budgetary performance. The government's primary goal is to get the best product for the money (nonrecurring and recurring), and this requires more emphasis on technical performance, often at the expense of the budget. However, in actuality, performance against a budget is much more objective (thus, easier to ascertain) than against technical parameters. As a result, the budget gets higher recognition during performance evaluations, and gets higher priority with the contractor, leading to friction between the contractor and the government. The government wants more effort on the technical side, but the contractor sees that as a budget buster. The responsibility for both budget and technical performance falls totally on the contractor, therefore, the contractor gives more priority to budgetary concerns—much to the chagrin of government personnel who now feel left out of the process.

Insufficient Funding

The IPT process is advertised as a cost-savings approach to acquisition. As such, during the initial phases of acquisition, IPTs are often provided lower funding levels. In reality, the IPT process requires more upfront funding to provide later paybacks in production and logistics savings, which makes investment in the IPT process worthwhile. Insufficient funding can also have a negative impact on an IPT's ability to attract required expertise from both the government and the contractor.

As previously noted, budget plays a big role in driving the contractor's management philosophy. Budgetary goals not only take priority (thus driving management decisions), but they also limit upfront activities that can save money in the future. In addition, budgetary goals can cause adverse relationships between the contractor and the government. For example, the government wants the contractor to explore alternatives that have potential for performance improvements or cost reductions, but the contractor sees these as additional expenses in terms of time and money that may have no payback. Budgetary constraints also drive the contractor to implement untested designs because testing delays the schedule and expends funds.

Recommendations

Although the IPT process has resulted in some significant gains for both the government and industry, several changes must be made to make the process more effective. Specifically, the government must replace the status-quo contractual language and primarily address levels of effort and desired system characteristics. The government must also provide competent and reliable personnel to participate in the IPT process. Funding should be sufficient for the required activities and flexible enough to cover unforeseen problems or to implement changes that provide good economic returns. The contractor also needs to cooperate fully with the government and be adequately compensated.

Conclusion

It is abundantly clear that the primary burden for a successful IPT rests with the government. But the government must recognize that partial implementation of the IPT process will fall far short of expectations.

DOUGLAS LOVE is a Systems Analyst in the MLRS Project Office, Army Aviation and Missile Command, Redstone Arsenal, AL, and served as Lead Analyst for the GMLRS. He has a B.S.I.E. degree from the Georgia Institute of Technology and an M.S. in engineering management from the Florida Institute of Technology.
